

IN THE CLAIMS

1. (Currently amended) A method comprising, etching a metal silicide layer during fabrication of an integrated circuit in a Cl_2/O_2 environment having an O_2 concentration of greater than or equal to 25% by volume, and
prior to said etching, a breakthrough etch,

wherein the Cl_2/O_2 environment is provided at a pressure of approximately 2-40 mili-Torr, and wherein the etching is a metal silicide etch that is selective to poly-silicon with a ratio of etch rates of at least 30.

2. (Cancelled)

3. (Currently amended) The method of claim 1 ~~2~~ wherein the pressure is approximately 3 mili-Torr.

4. (Original) The method of claim 1 wherein the Cl_2/O_2 environment is provided in a reactor with a source power of approximately 200 - 2000 Watts.

5. (Original) The method of claim 4 wherein the source power is approximately 400 Watts.

6. (Original) The method of claim 1 wherein the Cl_2/O_2 environment is provided in a reactor having a bias power of approximately 35 to 400 Watts.

7. (Original) The method of claim 6 wherein the reactor has a bias power of approximately 50 Watts.

8. (Original) The method of claim 1 wherein the metal silicide layer is a tungsten silicide layer.

9. (Original) The method of claim 1 wherein the Cl_2/O_2 environment comprises approximately 45 sccm Cl_2 and 30 sccm O_2 .

10. (Original) The method of claim 9 wherein the Cl_2/O_2 environment is provided for a time period sufficient to completely etch the metal silicide layer.

11. (Original) The method of claim 9 wherein the time period is approximately 30 seconds.

12. (Currently amended) A method comprising etching a metal silicide layer during fabrication of an integrated circuit in an environment having a concentration of O₂ greater than 25% by volume so as to selectively etch the metal silicide layer with respect to an underlying poly-silicon layer with a ratio of etch rates of at least 30, and prior to said etching, a breakthrough etch, wherein the etching is carried out at a pressure of 2-40 mili-Torr.

13. (Cancelled)

14. (Original) The method of claim 12 wherein the environment comprises approximately 45 sccm Cl₂ and 30 sccm O₂.

15. (Original) The method of claim 12 wherein the metal silicide is chosen from the group consisting of tungsten silicide, chromium silicide and titanium silicide.

16-20. (Cancelled)

21. (Currently amended) A method of etching a metal silicide, comprising etching of the metal silicide with a plasma, and prior to said etching, a breakthrough etch, wherein the plasma is prepared from a gas mixture comprising: chlorine, and greater than 25% by volume oxygen, the etching is carried out at a pressure of 2-40 mili-Torr, and the etching is a metal silicide etch that is selective to poly-silicon with a ratio of etch rates of at least 30.

22. (Cancelled)

23. (Currently amended) The method of claim 21 22, wherein said breakthrough etch comprises etching with a plasma prepared from a gas comprising CF₄.

24-26. (Cancelled)

27. (Previously Presented) The method of claim 21, wherein said gas mixture comprises: chlorine and from 25% to 30% by volume oxygen.

28. (New) The method of claim 1, wherein said breakthrough etch comprises etching with a plasma prepared from a gas comprising CF_4 .

29. (New) The method of claim 12, wherein said breakthrough etch comprises etching with a plasma prepared from a gas comprising CF_4 .